

NBFL Chassis Service Matrix



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Issue : 02

Date : July 2013

	Service Action	6 Weeks *	3 Months	6 Months	9 Months	12 Months	18 Months	24 Months	36 Months
		6000 Miles A	12000 Miles B	24000 Miles C	36000 Miles D	48000 Miles E	72000 Miles F	96000 Miles G	144000 Miles H
Air Cleaner	Check for leaks and mounting security		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check the restriction indicator	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Change main air filter element	When restriction indicator shows red or every 12 months / 48000miles							
	Change safety filter	Every 3rd main filter change							
	Check evacuation valves (2 off) for correct operation		✓	✓	✓	✓	✓	✓	✓
Air Conditioning	Check belt condition, tension, and pulley.	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Replace drive belt					✓			
	Check compressor security		Visual	Visual	Visual		Visual	✓	✓
	Service system					✓		✓	✓
	Carry out run up check, saloon and cab chillers	✓	✓	✓	✓	✓	✓	✓	✓
Front Axle	Check hub bearing condition			✓		✓	✓	✓	✓
	Strip and examine hub bearings, regrease	Every 48 Months Or 300,000 Miles							
	Check oil seals for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check axle fixings	Visual	Visual	Visual	Visual	✓	Visual	✓	✓
	Check wheel alignment and lock stop adjustment					✓		✓	✓
	Check king pins for wear					✓		✓	✓
	Lubricate king pins top and bottom, top and bottom wishbone bearings.					✓		✓	✓
Front Suspension									
	Check inboard wishbone bushes and fixings	Visual	Visual	Visual	Visual	✓	Visual	✓	✓
	Check condition of bump stops					✓		✓	✓
	Check damper bushes	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
Rear Axle									
	Check oil level			✓		✓	✓	✓	✓
	Change oil and casing breather. Check breather pipe.	Every 36 Months Or 90,000 Miles							
	Check hub bearing condition			✓		✓	✓	✓	✓
	Strip and examine hub bearings, regrease	Every 48 Months Or 300,000 Miles							
	Check hub and pinion oil seal for leakage	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check security of half shafts and studs			✓		✓	✓	✓	✓
Rear Suspension									
	Check V stay and control rod bushes, fixings	Visual	Visual	Visual	Visual	✓	Visual	✓	✓
	Check condition of bump stops					✓		✓	✓
Foundation Brakes									
	Check pad wear	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check disc wear and condition	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check condition of brake wear indicators, seals, pad retention components	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check condition of hoses and wiring	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check presence, fit and condition of sealing caps	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual

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Pneumatic Braking System	Check compressor oil level	Weekly							
	Clean unit prior to maintenance			✓		✓	✓	✓	✓
	Change compressor oil and oil filter					✓		✓	✓
	Change coalescing elements					✓		✓	✓
	Change compressor air filters, main and safety					✓		✓	✓
	Replace unloader, mpv seat, internal separator filter								Hydrovane Only
	Check compressor condition, e.g. oil carry over and build up times, oil leaks, water leaks, air leaks			✓		✓	✓	✓	✓
	Check all systems and warning buzzer function correctly. Confirm correct operating pressures are being achieved.	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check all pipe connections for leakage and fixings for security. Check rubber hoses etc for cracks and hardening	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check operation of the park brake	✓	✓	✓	✓	✓	✓	✓	✓
	Check operation of service brakes	✓	✓	✓	✓	✓	✓	✓	✓
	Check air dryer unit function and cleanliness. Check governor cut in and cut out pressures, build up times		✓	✓	✓	✓	✓	✓	✓
	Change air dryer cartridges			✓		✓	✓	✓	✓
	Drain air reservoirs of condensate	✓	✓	✓	✓	✓	✓	✓	✓
	Check for contamination discharge from silencers	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Road test	✓	✓	✓	✓	✓	✓	✓	✓
Cooling System, Engine	Check coolant level	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check seal and pressurisation feature on caps				Visual		Visual		Visual
	Check engine anti-freeze solution strength		✓	✓	✓	✓	✓	✓	✓
	Check low coolant sensor operation		✓	✓	✓	✓	✓	✓	✓
	Drain system, flush and refill with coolant	First 3000 Miles						✓	
	Check hoses for deterioration and all connections for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check radiator matrix and clean external debris	✓	✓	✓	✓	✓	✓	✓	✓
	Check radiator mountings							✓	
	Check fan and motor for mounting security and damage		Visual	Visual	Visual	✓	Visual	✓	✓
	Check operation of cooling fans			✓		✓	✓	✓	✓
Electrical	Check connections for cleanliness, security and insulation			Visual		Visual		Visual	Visual
	Check instrument warning lights, switches, direction indicators, fog lights, brake lights and horn for correct operation	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check DC / DC 24V converter, 24V charging voltage		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check correct operation of the instruments	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check terminal security and re-apply petroleum jelly		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check condition and security of all earth bonds		Visual	Visual	Visual	✓	Visual	✓	✓

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Engine and Ancillaries	Check oil level	Visual	Visual		Visual				
	Change oil and filter	See Table Below							
	Change engine fuel filters				✓		✓	✓	✓
	Check for oil, coolant and fuel leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check charge air piping for security, leaks, cracking	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check crankcase breather tube for blockages		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check power unit engine mounts, security to chassis	Visual	Visual	Visual	Visual	✓	Visual	✓	✓
	Check for excessive engine exhaust smoke	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check engine components/ancillaries for contamination. Clean / degrease as required	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Adjust valve clearances	First check at 150,000 miles, then every subsequent 50,000 miles							
	Change coupling drive rubbers	Every 5 years							
	Dosing unit airside flush (Cummins procedure 011-082)	Every 30,000 miles, or 1000 hours, or 1 year							
SCR	Check/clean Ad Blue filler neck, surroundings	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check clamp security, ensure no leakage		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check mountings for sign of damage or deterioration	Re-torque straps	Visual	Visual	Visual	Re-torque straps	Visual	Re-torque straps	Re-torque straps
	Change doser unit in-line air filter				✓		✓		✓
	Check exhaust system for damage		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check condition of wiring to temp. and NOx sensors	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
Fuel System	Drain water from remote filter	Daily	✓	✓	✓	✓	✓	✓	✓
	Check fuel cap for leaks and secure fitting	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check security of fuel tank and mountings	Re-torque straps	Visual	Visual	Visual	Re-torque straps	Visual	Re-torque straps	Re-torque straps
	Change remote fuel filter				✓		✓		
	Check fuel tank for external damage/corrosion		Visual	Visual	Visual	Visual	Visual	Visual	Visual
Drive Shaft	Check tightness of fixings			Visual		Visual	Visual	Visual	Visual
	Check for wear & heat damage to UJ's			Visual		Visual	Visual	Visual	Visual
	Check for spline wear & damage to rilsan coat			Visual		Visual	Visual	Visual	Visual
	Check bearing snap rings, balance weights, all seals			Visual		Visual	Visual	Visual	Visual
	Check joint bearings - manual rotation of yoke							Dismount	
	Check spline condition, backlash and axial backlash							Dismount	
	Regrease universal joints		✓	✓	✓	✓	✓	✓	✓
Steering Gear	Check oil reservoir mounting integrity		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check hydraulic oil fluid level	Weekly							
	Clean unit prior to maintenance					✓		✓	✓
	Change hydraulic filter					✓		✓	✓
	Change hydraulic fluid					✓		✓	✓
	Check steering and bevel boxes for leakage, security		Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check for steering column/wheel play	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check linkages and ball joints for wear and security	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check hydraulic steering limiter					✓		✓	✓
	Check piping system for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
Air Suspension	Lubricate steering relays					✓		✓	✓
	Check piping system for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check security of wiring, and sensors for damage	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check ferry lift and kneel function	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check spring mountings for security		Visual	Visual	Visual	✓	Visual	✓	✓
	Check shock dampers and their mountings		Visual	Visual	Visual	✓	Visual	✓	✓
	Check vehicle ride height		✓	✓	✓	✓	✓	✓	✓

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Wheels and Tyres	Visually inspect all wheel nuts	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check and torque all wheel nuts. Note loose wheel nuts	✓	✓	✓	✓	✓	✓	✓	✓
	Check tyres are free from damage, cuts, bulging, debris	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check all tyre pressures	✓	✓	✓	✓	✓	✓	✓	✓
	Check tread depth to legal limit	✓	✓	✓	✓	✓	✓	✓	✓
	Check valves are at 180° to each other on rear axle twin tyres	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
Body	Inspect body connections for security					Visual		Visual	Visual
	Check wheelchair ramp, and warning lights	✓	✓	✓	✓	✓	✓	✓	✓
	Align headlamps					✓		✓	✓
	Clean out and lubricate wheelchair ramp		✓	✓	✓	✓	✓	✓	✓
	Check operation of engine bay micro switches	✓	✓	✓	✓	✓	✓	✓	✓
	Check heaters, Remove & clean refit heater / demister filters	✓	✓	✓	✓	✓	✓	✓	✓
	Lubricate all hinges, locks, door/seat mechanisms, blind gear	✓	✓	✓	✓	✓	✓	✓	✓
	Check emergency switches operate	Every 2 wks	✓	✓	✓	✓	✓	✓	✓
	Drain door regulator bowl	✓	✓	✓	✓	✓	✓	✓	✓
Hybrid Systems	Visually inspect traction motor, bolts, cooling, connections and damage	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Check earths for damage, condition, security, continuity, all hybrid components					Visual			
	Grease traction motor and drain condensate	Every 44000 miles							
	Change traction motor bearing grease	Every 48 months or 175000 miles							
	Change generator bearings	Every 60 months							
	Check, investigate stored errors, Cummins, Siemens, ECAS, EBS, HV batteries	✓	✓	✓	✓	✓	✓	✓	✓
	HV battery : Check coolant level	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	HV Battery : Check seal and pressurisation feature on caps				Visual		Visual		Visual
	HV battery : Check anti-freeze solution strength		✓	✓	✓	✓	✓	✓	✓
	HV battery : Drain system, flush and refill with coolant	First 3000 Miles						✓	
	HV battery : Check hoses for deterioration and all connections for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	HV battery : Check radiator matrix and clean external debris	✓	✓	✓	✓	✓	✓	✓	✓
	HV battery : Check radiator mountings							✓	
	HV battery : Check fan and motor for mounting security and damage		Visual	Visual	Visual	✓	Visual	✓	✓
	HV battery : Check operation of cooling fans			✓		✓	✓	✓	✓
	Hybrid Cooling : Check coolant level	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Hybrid Cooling : Check seal and pressurisation feature on caps				Visual		Visual		Visual
	Hybrid Cooling : Check anti-freeze solution strength		✓	✓	✓	✓	✓	✓	✓
	Hybrid Cooling : Check low coolant sensor operation		✓	✓	✓	✓	✓	✓	✓
	Hybrid Cooling : Drain system, flush and refill with coolant	First 3000 Miles						✓	

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Hybrid Systems (contd)	Hybrid Cooling : Check hoses for deterioration and all connections for leaks	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Visual
	Hybrid Cooling : Check radiator matrix and clean external debris	✓	✓	✓	✓	✓	✓	✓	✓
	Hybrid Cooling : Check radiator mountings							✓	
	Hybrid Cooling : Check fan and motor for mounting security and damage		Visual	Visual	Visual	✓	Visual	✓	✓
	Hybrid Cooling : Check operation of cooling fans			✓		✓	✓	✓	✓

Engine Oil Drain & Oil Filter Change Interval Cummins Recommendations For Approved Oil Specs.

	Average Vehicle Speed				
	6 MPH	6 - 9 MPH	9 - 12 MPH	12 - 16 MPH	16 - 19 MPH
Mileage	3500	4700	7000	9500	11700
Hours	7500	7500	7500	7500	7500
Months	3	3	3	3	3

Change oil & filter by mileage, hours in service, or calendar months depending on which occurs first
Use the lower oil change interval if the average vehicle speed is on a transition

CES 20077 ACEA E5, E7 API CH4, CI4
CES 20078

Fluids & Lubricants

Part number	
CMM-00485	Engine oil
CMM-00442	Engine coolant
CMM-00442	Battery circuit coolant
CMM-00438	Hybrid circuit coolant
CMM-00441	Steering fluid
CMM-00456	Rear axle oil
PTX-00975	Torque stripe paint
CMM-00496	Front & rear axle hub grease
See right	Front axle pivot point grease
See right	Drive shaft UJ grease
See right	Traction motor grease
CMM-00427	Air compressor, lube oil

Engine

CMM-00464	Fuel filter
CMM-00458	Engine oil filter
CMM-00487	Sump plug sealing washer
CMP-00015	Air con drive belt
CMM-00459	Fuel filter, chassis mounted

A lithium-saponified multi-purpose grease of NLGI class 2, mixable with mineral oil
Lithium based EP grease to NLGI Grade 2, temp range -23 to 163 deg C
Shell Retinax LX2 rolling contact grease / Shell AG
Fluid Force 4000

Air Intake

CPT-01540	Main filter element
CPT-01541	Main filter element + safety filter element

After Treatment

CPT-01570	SCR, air filter for Adblue pump
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Pneumatic brakes (Compressor)

CMM-00492	Oil filter
CMM-00493	Coalescing filter
CMM-00490	Air intake filter assy complete
CMM-00494	Air filter main element
CMM-00495	Air filter safety element
CMM-00491	Air dryer filter
CMM-00498	Service kit, filters. Contents in bold

Steering

CMM-00462	Reservoir internal filter
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